

REMARKS/ARGUMENTS

The last Office Action dated 2/13/2006 has been carefully considered.

Specification

It is noted that the specification is objected to as failing to provide proper antecedent basis for the cushioning apparatus containing indicia disposed on an exterior surface as disclosed in original claim 2.

New drawings (2a and 2b) has been submitted to show an embodiment of the cushioning apparatus containing indicia. The provisional application 60/458,175 which was incorporated by reference in the present utility application disclosed a cushioning apparatus with indicia.

It is respectfully submitted that new drawings (2a and 2b) be amended into the drawings of the specification. This will provide proper antecedent basis for the indicia of original claim 2 and original claim 4 whose subject matter is now included in amended claims 6 and 10.

Several editorial changes to the specification have been requested.

The insertion of added paragraph 16 has also been requested. One of the purposes of an embodiment of the padded end cap is to "help prevent injuries" (provisional appl. 60/458,175 as described under "Specifications: Concept" no page number provided.) It is hereby requested that paragraph 16 be inserted to clarify a distinguishing feature of an embodiment of the present invention.

MARKED-UP VERSION**[0041] SPECIFICATION**

[0042] TITLE: PADDED END CAP FOR VEHICLE LIFTING HOIST ARM

[0043] CROSS REFERENCE TO RELATED APPLICATIONS

[0044] This application claims priority from U.S. Provisional Patent Application No. 60/458,175 filed March 26, 2003. The contents of U.S. Provisional Patent Application No. 60/458,175 are fully incorporated herein by reference.

[0045] FIELD OF THE INVENTION

[0046] This present invention relates to automotive lift assemblies, particularly a padded end cap for the end of lifting hoist arms of the automotive lifts.

[0047] ~~PRIOR ART~~ BACKGROUND OF THE INVENTION

[0048] Automotive lift systems are well known in the art, particularly in the automotive servicing field, where a technician must often raise a vehicle to a predetermined height above the ground in order to make appropriate repairs. Automotive lift assemblies can be constructed in a variety of configurations but typically have four lifting arms which the vehicle rests on. The lifting arms are extendable to support the vehicle at prescribed load bearing positions.

[0049] All automotive lifting arms are made of metal and most are square or rectangular in shape. The ends of the lift arms are also predominately square or rectangular in shape. Some manufacturers however, include a cylindrical attachment at the end of their lifting arms to hold a vehicle support stand.

[0050] Regardless of the shape of the lifting arm and/or its end, all commercially available lift arms are comprised of metal. There is no evidence of any device available to attach to the end of the lifting arms to provide a surface softer than metal, i.e., a cushioning surface.

[0051] *SUMMARY OF THE INVENTION*

[0052] This present invention is a padded end cap for cushioning the end of the lifting arms on automotive lifts. This article of manufacture supplies a low-cost, durable product that can be easily fitted to the end of the lifting arms of an automotive lift system.

~~[0053] — OBJECTS AND ADVANTAGES~~

[0054] The object of the padded end cap is to provide a surface on the end of the lifting arm that is softer than the composition of the lifting arm.

[0055] A further object of an embodiment of the invention is to provide a low-cost, durable device that can be utilized by manufacturers of automotive lift systems as well as commercial operators or home users of new or existing use automotive lifts. This device can be attached to the end of each lifting arm on an automotive lift by any of the means listed herein[[after]] as well as other suitable attachment means known by those skilled in the art.

[0056] Another advantage of an embodiment of the padded end cap of the present invention is to lessen the effect of injuries to a person coming in contact with the end of the hoist arm. This is accomplished in part by the shape, location and cushioning properties of the end cap.

[0057] Additional advantages and novel features of the present invention will be set forth in part in the description which follows, and in part will become apparent to those skilled in the art upon examination of the following, or may be learned by practice of the invention. The advantages of the invention may be realized and attained by means of the instrumentalities and combinations particularly pointed out in the appended claims.

[0058] *BRIEF DESCRIPTION OF DRAWINGS*

[0059] The character of the invention, however, may be best understood by reference to one of its structural forms, as illustrated by the accompanying drawings, in which:

[0060] Fig. 1 is a perspective view of a padded end cap with a plurality of attachment surfaces for affixing the padded end cap to a lifting arm.

[0061] Fig. 2a is a perspective view of a padded end cap offset from the end of a lifting arm.

[0062] Fig. 2b is a perspective view of a padded end cap in place on the end of a lifting arm.

[0063] Fig. 3a is a perspective view of a two-post automotive lift system with four vehicle-lifting arms.

[0064] Fig. 3b is a perspective view of a padded end cap in place on the end of a lifting arm.

[0065] Fig. 4 is a perspective view of a cylindrical or semi-circular shaped padded end cap.

[0066] Fig. 5a is a perspective view of a cylindrical or semi-circular padded end cap offset from the cylindrical end of a lifting arm.

[0067] Fig. 5b is a perspective view of a cylindrical or semi-circular padded end cap affixed to the cylindrical end of a lifting arm.

[0068] ~~List of Reference Numerals~~

[0069] ~~The following is a list of reference numerals utilized in the drawings provided.~~

[0070] ~~10 Lifting Arm Padded End Cap~~

[0071] ~~12 Back Attachment Surface of Padded End Cap~~

[0072] ~~14 Bottom Attachment Surface of Padded End Cap~~

[0073] ~~16 Side Attachment Surface of Padded End Cap~~

[0074] ~~18 Lifting Arm~~

~~[0075] — 20 Vehicle Support Stand~~

~~[0076] — 22 Automotive Lift Support Post~~

~~[0077] — 24 Lifting Arm Padded End Cap (Semi-Cylindrical or Semi-Circular)~~

~~[0078] — 26 Attachment Surface on Semi-Cylindrical or Semi-Circular Padded End Cap~~

~~[0079] — 28 Base for Vehicle Support Stand~~

[0080] *DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS*

[0081] Referring to Fig. 1, which best shows the general features of one embodiment of the invention, a vehicle lifting arm padded end cap (10) is shown with a plurality of attachment surfaces. The one-piece lifting arm padded end cap was produced via a compression molded process utilizing closed cell foam materials. The padded end cap can be produced utilizing any resilient material including, but not limited to, expanded foam, rubber, extruded foam rubber, sponge foam polyurethane foam, integral skin foams, rigid closed cell, integral flexible open cell, expanded polystyrene or compression-molded, closed cell cross-linked polyethylene or other suitable materials. These processes are utilized in manufacturing industries and well known to those skilled in the art.

[0082] The Fig. 1 embodiment has a plurality of attachment surfaces for affixing the padded end cap to the end of a lifting arm. Item 12 is a vertical back attachment surface. Item 14 is a horizontal bottom attachment surface. Item 16 is a vertical side attachment surface. There are two opposing vertical attachment surfaces. The configuration of the embodiment shown in Fig. 1 is best suited to fit on the end of a lifting arm that has a square or rectangular shape. The attachment surfaces shown are set against the corresponding end, sides and bottom of a square or rectangular lifting arm.

[0083] Padded end caps may be attached to the vehicle lifting arm by, but not limited to, the following means: magnetic, spring clips, ~~Velcro~~hook and loop fastener, tie straps, nuts, bolts, screws, snug-fit, slip on, double sided tape, or adhesives.

[0084] Fig. 2a shows a typical rectangular lifting arm (18) with a vehicle support stand (20). A padded end cap (10) is shown offset from the end of the lifting arm (18).

[0085] Fig. 2b shows a typical rectangular lifting arm (18) with a vehicle support stand (20) and an attached padded end cap (10). Figs. 2a and 2b also show indicia on an exterior surface.

[0086] A typical two-post aboveground automotive lift system is shown in Fig. 3a. Two vehicle lifting arms (18) are attached to each support post (22).

[0087] Fig. 3b offers a view of a lifting arm (18) with an attached padded end cap (10) in place.

[0088] Fig. 4 shows a cylindrical or semi-circular padded end cap (24) with one concave attachment surface (26).

[0089] Fig. 5a illustrates a square or rectangular lifting arm (18) with an attached cylindrical base (28) to hold a vehicle support stand (20). Offset from the end of the lifting arm is a cylindrical or semi-circular padded end cap (24).

[0090] Fig. 5b shows a square or rectangular lifting arm (18) with an attached cylindrical base (28) to hold a vehicle support stand (20). A semi-cylindrical or semi-circular padded end cap (24) is attached to the cylindrical base.

[0091] CONCLUSIONS, OTHER EMBODIMENTS, AND SCOPE OF INVENTION

[0092] The padded end cap described herein is a new and useful device attached to the end of a vehicle lift arm on automotive lifts. This article of manufacture can be utilized on a variety of vehicle lift arms and can lessen the effect of injuries caused by a person coming in contact with the end of the lift or hoist arm. Embodiments of the padded end cap can be manufactured to fit all types of vehicle lift arm end configurations.

[0093] Thus, although there have been described particular embodiments of the present invention of a new and useful padded end cap, it is not intended that such references be construed as limitations upon the scope of this invention. Various modifications, alternate constructions and equivalents can be employed without departing from the true spirit and scope of the invention. Therefore, the above description and interrelated drawings shall not be construed as limiting the invention. The actual scope of the invention is defined by the breadth of the appended claims.

Claim Amendments

A marked-up version of the amended claims follows.

Claims 5, 6, 9 and 10 are currently amended.

5. (Currently amended) In combination:

an automotive lift system lifting arm having a substantially rectangular or square end;

a cushioning apparatus connected ~~for attaching~~ to the substantially rectangular or square end of the lifting arm, said cushioning apparatus comprising:

a solid body of resilient material having a plurality of exterior surfaces and a front section, two adjacent side sections substantially perpendicular to the front section, and a bottom section substantially perpendicular to the side sections and the front section[[:]]

~~an attachment means for affixing said cushioning apparatus to the substantially rectangular or square end of an automotive lift system lifting arm.~~

6. (Currently amended) A combination according to claim [[1]]5 wherein the cushioning apparatus contains indicia disposed on [[an]] at least one exterior surface.

9. (Currently amended) In combination:

an automotive lift system lifting arm having a substantially cylindrical, circular or semi-circular end;

a cushioning apparatus connected ~~for attaching~~ to the substantially cylindrical, circular or semi-circular end of the lifting arm, said cushioning apparatus comprising:

a solid body of resilient material having a semi-cylindrical or semi-circular shape, and

at least one concave attachment surface for affixing said cushioning apparatus to the cylindrical, circular or semi-circular end of an automotive lift system lifting arm.

~~an attachment means for affixing said cushioning apparatus to the cylindrical, circular or semi-circular end of an automotive lift system lifting arm.~~

10. (Currently amended) A combination according to claim ~~[[3]]~~9 wherein the cushioning apparatus contains indicia disposed on an exterior surface.

Claims: Response to Rejections

It is noted that Claims 1-4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yeo (6,244,390) in view of Danneker (5,984,058). Yeo discloses an "In Ground Lift" and Danneker a "Cushioned Braking System". Examiner states that "It would have been obvious to an ordinary skill in the art at the time the invention was made to modify the apparatus of Yeo to include a cushioning apparatus of resilient material as taught by Danneker to be attached to the end of a lift arm so that the lift arm could be provided with a padded cushion to protect the arm from scratching or interfering with the lifted item."

There is no suggestion in the references that they be combined.

The Examiner appears to be projecting a need to the Yeo patent based on unrelated isolated teachings from the Danneker patent. The Yeo patent discloses an inground lift with lift arms that "may include a pair of support pads that may be adjusted so as to properly support and lift a vehicle driven thereon" (col.5 ln 58-60). In Yeo, as clearly stated, the support pads are to properly support the vehicle.

Danneker discloses a "Cushioning Braking System" that includes "an end cap capable of stopping the trolley" (Col 5 ln 18-19). The purpose of the end cap in Danneker is clearly to stop a trolley. There is no suggestion that an end cap to stop a trolley would be utilized on an inground lift to properly support and lift a vehicle.

That a cited art reference could be modified to form the claimed structure does not supply a suggestion to do so. "The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." In re Laskowski, 871 F.2d 115, 10 USPQ2d 1397 (Fed. Cir. 1989). Also, the Examiner may not use isolated teaching from the references. (see Bausch & Lomb v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443, 448 (Fed. Cir. 1986)) MPEP 2141.02.

"There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a prima facie case of obviousness was held improper.).

The nature of the problem solved by the present invention is the lessening the effect or extent of injuries to a person caused by contact with the end of the hoist lift arm. This problem is not addressed in the Yeo or Danneker patents. As noted previously, the teachings of the cited art do not provide a source for motivation to combine references. As to the knowledge of persons of ordinary skill in the art, the level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999). MPEP 2143.01.

Examiner has also rejected Claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Yeo (6,244,390) in view of Lee (6,805,221). As mentioned supra, the Yeo patent discloses an inground lift with lift arms that "may include a pair of support pads that may be adjusted so as to properly support and lift a vehicle driven thereon" (col. 5 ln 58-60). In Yeo, as clearly stated, the support pads are to properly support the vehicle.

Lee discloses a ladder positioning system which utilizes an end cap with an elastomeric pad affixed to the bottom of a support leg of the ladder. The purpose of the Lee pad is to prevent the ladder from slipping and/or to prevent marring of a support surface. The nature of the problem solved by the present invention (lessening the effect or extent of injuries to a person caused by contact with the end of the hoist lift arm) is not addressed in the Yeo or Lee patents. As such, the teachings of the cited art do not provide a source for motivation to combine references. As to the knowledge of persons of ordinary skill in the art, the level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999). MPEP 2143.01.

The features as claimed are not found in either Yeo or Danneker or Lee (and therefore could not be found in the combination) and the combination could not realize the advantages or benefits of the claimed invention.

The primary purpose of the padded end cap of present invention is to lessen the effect of injuries to a person coming in contact with the end of the hoist arm. This can be accomplished due to the shape and material properties of the end cap. As can be seen by the configuration and applications illustrated in 2A, 2B, 3B, 5A and 5B, the vehicle support stand (#20 in Fig 2A and 2B) lifts the vehicle clear of the end of the lift arm in most instances. Thus, the cushioning apparatus would be more effective in lessening the effect of injuries to a person than protecting a vehicle from being scratched by the end of the lift arm.

Yeo includes no such feature that would lessen the effect of injuries to a person coming in contact with the end of the hoist arm. The support pad mentioned in Yeo is merely to support and lift a vehicle. The cushioning apparatus in Danneker is attached to the end of an axle-like member and utilized to stop the trolley. The elastomeric pad in Lee is utilized to prevent the ladder from slipping and/or to prevent marring of a support surface. The features found in Yeo, Danneker or Lee could not realize the advantages or benefits of the claimed invention.

Furthermore, the stated purposes of the Yeo, Danneker and Lee patents are clearly different from an intended purpose of lessening the effect of injuries to a person coming in contact with the end of the hoist arm. Thus it is maintained that Yeo, Danneker and Lee teach away from using a padded end cap as utilized in an embodiment of the present invention. A reference should be considered as a whole, and portions arguing against or teaching away from the claimed invention must be considered. See *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 230 USPQ 416 (Fed. Cir. 1986). MPEP 2141.02.

The Yeo, Danneker and Lee References Solve a Different Problem

The above-cited references do not address or recognize the problem solved by the claimed invention as stated supra. Applicant's invention solves a different problem in that it lessens the effect or extent of injuries to a person caused by contact with the end of the hoist lift arm. "The ultimate determination of patentability must be based on consideration of the entire record" In re Oetiker, 24 USPQ 2d 1443 (Fed. Cir. 1992).

Furthermore, "It is the properties and utilities that provide real world motivation for a person of ordinary skill to make species structurally similar to those in the prior art" (MPEP 2144.08d) Dillon, 919 F.2d at 697, 16USPQ 343, 348 (CCPA 1971).

It is respectfully submitted that the claims 1-6 clearly and patentably distinguish over the cited art, since it is believed that the construction defined in these claims differs essentially and in an unobvious, highly advantageous manner from the constructions disclosed in the references. Applicant believes that combining the references discussed above would not lead to the claimed invention, in that the present invention does not merely employ the known substitution of equivalents but rather employs a new, non-obvious combination to accomplish the objectives set out in the present application.

As for the proposed combination of references cited by the examiner, it is respectfully submitted that because none of the references in the combination teaches the distinctive features of applicant's invention as defined in the claims 1-6, any hypothetical construction produced by this combination would not lead to applicants' invention.

In view of these considerations, it is respectfully submitted that the rejection of the original claims should be considered as no longer tenable and should be withdrawn. Amended and new claims 5-13 should be considered as patentably distinguishing over the cited art and a request for allowance is made.

Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims and/or drawing, then it is respectfully asked that such changes be made by Examiner's Amendment, if the Examiner feels this would facilitate passage of the case to issuance. Alternatively should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, he is invited to telephone the undersigned.

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